

IN THE CLAIMS

1. (currently amended): A system for wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region,

wherein ~~information communication~~ of the information is initiated in the transmission frame by using ~~in the~~ asynchronous access region and, ~~in excess of a predetermined~~ when a transmission capacity of the asynchronous access region is exceeded, channel time of a guaranteed time slot is allocated for communicating at least a portion of the information by using the channel-time-allocation access region.

2. (currently amended): A system for wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region,

wherein communication of the information in the transmission frame is initiated by using the asynchronous access region, and when a transmission capacity of the asynchronous access region is not exceeded during the asynchronous access, ~~below a predetermined transmission capacity during channel time for communication in the channel-time-allocation access region allocation communication, channel time is released.~~

3. (currently amended): A wireless communication device for performing frame-based channel time allocation within a wireless network in which wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region is performed at a predetermined frame period between wireless communication devices, said wireless communication device comprising:

request receiving means for receiving at least one of a channel time allocation request and a channel time release request from another wireless communication device in the wireless network; and

frame setting means for setting the asynchronous access region and the channel-time-allocation access region in the transmission frame period according to the received at least one of the channel time allocation request and the channel time release request.

4. (currently amended): A wireless communication method of performing frame-based channel time allocation within a wireless network in which wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region is performed at a predetermined frame period between wireless communication devices, said wireless communication method comprising:

a request receiving step of receiving at least one of a channel time allocation request and a channel time release request from a wireless communication device in the wireless network; and

a frame setting step of setting the asynchronous access region and the channel-time-allocation access region in the ~~frame-transmission frame~~period according to the received at least one of the channel time allocation request and the channel time release request.

5. (currently amended) A wireless communication device operating in a wireless network in which wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region is performed at a predetermined frame period ~~under the management of a control station~~, said wireless communication device comprising:

control means for allocating channel time of a channel-time-allocation access region of the transmission frame;

transmission information storing means for storing information intended to be transmitted;

asynchronous access control means for transmitting information in the transmission frame using ~~in~~ the asynchronous access region;

channel time allocation communication control means for transmitting information in the transmission frame using

~~channel time allocated in the channel-time-allocation access~~
region;

~~transmission information storing means for storing~~
~~transmission information;~~

transmission capacity determining means for
determining ~~the~~ an amount of information transmittable in the
asynchronous access region of the transmission frame; and

channel time request means for sending a channel time
allocation request or a channel time release request to the
~~control station~~ control means according to a result of comparison
between the amount of information intended to be transmitted
stored in the transmission information storing means and the
amount of transmittable information determined by the
transmission capacity determining means.

6. (original): A wireless communication device
according to claim 5, wherein the transmission capacity
determining means determines the amount of information
transmittable in the asynchronous access region by dividing the
overall bandwidth of the asynchronous access region by the
number of wireless communication devices forming the wireless
network.

7. (currently amended): A wireless communication
device according to claim 5, wherein the channel time request
means sends the channel time allocation request to the control
~~station~~ means when the amount of information stored in the

transmission information storing means exceeds the amount of information determined by the transmission capacity determining means during transmission of the information in the asynchronous access region of the transmission frame performed by the asynchronous access control means.

8. (currently amended): A wireless communication device according to claim 5, wherein the channel time request means sends the channel time release request to the control ~~station~~ means when the amount of information stored in the transmission information storing means is below the amount of information determined by the transmission capacity determining means during transmission of the information in the channel-time-allocation access region of the transmission frame performed by the channel time allocation communication control means.

9. (currently amended) A wireless communication method of performing wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region at a predetermined frame period under the management of a control station in a wireless network, said wireless communication method comprising:
storing transmission information intended to be transmitted in the transmission frame;

determining an amount of information that can be transmitted in the asynchronous access region of the transmission frame;

comparing the amount of information determined in said determining with the information stored in said storing;

requesting allocation of time at said control station for the channel-time-access region of the transmission frame if the information stored in said storing exceeds the amount of information determined in said comparing;

requesting release of time at said control station for the channel-time-access region of the transmission frame if the information stored in said storing does not exceed the amount of information determined in said comparing;

transmitting at least a portion of said information stored in said storing in the asynchronous access region; and

transmitting a remaining portion of said information stored in said storing in the channel-time-allocation access region if time was allocated in said requesting allocation of time

~~an asynchronous access control step of transmitting information in the asynchronous access region;~~

~~a channel time allocation communication control step of transmitting information using channel time allocated in the channel time allocation access region;~~

~~a transmission information storing step of storing transmission information;~~

~~a transmission capacity determining step of determining the amount of information transmittable in the asynchronous access region; and~~

~~a channel time request step of sending a channel time allocation request or a channel time release request to the control station according to a result of comparison between the amount of information stored in the transmission information storing step and the amount of information determined in the transmission capacity determining step.~~

10. (currently amended): A wireless communication method according to claim 9, wherein ~~the transmission capacity determining step~~said step of determining includes dividing the overall bandwidth of the asynchronous access region by the number of wireless communication devices forming the wireless network to determine the amount of information transmittable in the asynchronous access region.

11. (currently amended): A wireless communication method according to claim 9, wherein ~~the channel time request step~~of requesting allocation of time includes sending the channel time allocation request to the control station when the amount of information stored in said ~~the transmission information storing step of storing~~ exceeds the amount of information determined in ~~the transmission capacity determining step~~said step of determining during transmission of the information in the asynchronous access region performed in the

step of transmitting in the asynchronous access region
~~asynchronous access control step.~~

12. (currently amended): A wireless communication method according to claim 9, wherein the ~~channel time request~~ step of requesting release of time includes sending the channel time release request to the control station when the amount of information stored in the ~~transmission information storing~~ step of storing is below the amount of information determined in said the transmission capacity determining step of determining during transmission of the information in the channel-time-allocation access region performed in the ~~channel time allocation~~ communication control step step of transmitting by channel-time-allocation access region.

13. (currently amended): A computer-readable medium storing a computer program described in a computer-readable ~~format for executing configured to execute~~ on a computer system a method of allocating frame-based channel time allocation for ~~process within~~ a wireless network in which wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region is performed at a predetermined frame period between wireless communication devices, the computer program comprising:

~~a request receiving step of receiving at least one of~~
a channel time allocation request and a channel time release

request from a wireless communication device in the wireless network; and

~~a frame setting step of setting the asynchronous access region and the channel-time-allocation access region in the transmission frame period according to the received at least one the channel time allocation request and the channel time release request.~~

14. (currently amended): A computer-readable medium storing a computer program described in a computer readable format for executing configured to execute on a computer system a process for performing wireless communication of information using a transmission frame having an asynchronous access region and a channel-time-allocation access region at a predetermined frame period under the management of a control station in a wireless network, the computer program comprising:

storing transmission information intended to be transmitted in the transmission frame;

determining an amount of information that can be transmitted in the asynchronous access region of the transmission frame;

comparing the amount of information determined in said determining with the information stored in said storing;

requesting allocation of time at said control station for the channel-time-access region of the transmission frame if the information stored in said storing exceeds the amount of information determined in said comparing;

requesting release of time at said control station for the channel-time-access region of the transmission frame if the information stored in said storing does not exceed the amount of information determined in said comparing;

transmitting at least a portion of said information stored in said storing in the asynchronous access region; and

transmitting a remaining portion of said information stored in said storing in the channel-time-allocation access region if time was allocated in said requesting allocation of time

~~an asynchronous access control step of transmitting information in the asynchronous access region;~~

~~a channel time allocation communication control step of transmitting information using channel time allocated in the channel time allocation access region;~~

~~a transmission information storing step of storing transmission information;~~

~~a transmission capacity determining step of determining the amount of information transmittable in the asynchronous access region; and~~

~~a channel time request step of sending a channel time allocation request or a channel time release request to the control station according to a result of comparison between the amount of information stored in the transmission information storing step and the amount of information determined in the transmission capacity determining step.~~

15. (currently amended): A computer program according to claim 14, wherein the ~~transmission capacity determining step of determining~~ includes dividing the overall bandwidth of the asynchronous access region by the number of wireless communication devices forming the wireless network to determine the amount of information transmittable in the asynchronous access region.

16. (currently amended): A computer program according to claim 14, wherein the ~~channel time request step of requesting allocation of time~~ includes sending the channel time allocation request to the control station when the amount of information stored in the ~~transmission information storing step of storing~~ exceeds the amount of information determined in the ~~transmission capacity determining step of determining~~ during transmission of the information in the asynchronous access region performed in the ~~asynchronous access control step of transmitting in the asynchronous access region~~.

17. (currently amended): A computer program according to claim 14, wherein the ~~channel time request step of requesting release of time~~ includes sending the channel time release request to the control station when the amount of information stored in the ~~transmission information storing step of storing~~ is below the amount of information determined in the ~~transmission capacity determining step of determining~~ during transmission of the information in the channel-time-allocation

access region performed in the ~~channel-time-allocation~~
~~communication-control~~ step of transmitting in the channel-time-
allocation access region.

18. (new): A wireless communication method of performing wireless communication of information using a transmission frame having an asynchronous access region in a contention access period and a channel-time-allocation access region in a contention free period, the method being under the management of a control station in a wireless network, said wireless communication method comprising:

transmitting information in the asynchronous access region of the contention access period of the transmission frame;

determining the amount of information transmittable in the asynchronous access region during said transmission frame;

sending a channel time allocation request to the control station according to a result of said step of determining; and

transmitting at least a portion of the information using channel time allocated in the channel-time-allocation access region during said transmission frame.

19. (new): The wireless communication method according to Claim 18, wherein said step of transmitting information using channel time further comprises:

allocating a guaranteed time slot to transmit a remaining information not transmittable in said asynchronous access region of the transmission frame.

20. (new): The wireless communication method according to Claim 19, wherein said step of allocating is

performed without receiving an announcement of completion of channel time allocation communication from an upper-layer application.